



Department of Energy Lessons Learned Program

Value of Lessons Learned

March 2000

Introduction

The Society for Effective Lessons Learned Sharing (SELLS) has established an infrastructure for capturing, distributing, and archiving good work practices and success stories across the complex. The Society encourages DOE employees, contractors, and organizations to:

- Identify and share innovative ways to solve problems;
- Emphasize positive experiences and strengths;
- Encourage using information about successes experienced by others when planning and implementing new projects;
- Demonstrate and promote continuous safety, operational improvement, and cost savings;
- Learn from past experiences; and,
- Share successes/good work practices.

The DOE Lessons Learned Standard (DOE-STD-7501-99) defines a *Lesson Learned* as: A "good work practice" or innovative approach that is captured and shared to promote repeat application; or, an adverse work practice or experience that is captured and shared to avoid recurrence.

The purpose of this fact sheet is to focus on sharing positive lessons learned; to encourage identifying and sharing success stories; and to share successes from utilizing lessons learned information. In this context, a success story is an application of information from a previously issued lessons learned that was applied to improve operations at another DOE site or facility.

Success Stories

March 1999

Using lessons from a fatal June, 1998 carbon dioxide fire protection system discharge at INEEL, personnel at Hanford analyzed two processes involving compressed gasses. At the Pacific Northwest National Laboratory, they found low oxygen levels in a room where nitrogen dewars are filled. At the Fast Flux Test Facility, they found the Halon system for the emergency diesel enclosure could cause excessive Halon levels with no evacuation warning or discharge delay. Both of these situations would not have been found except for the heightened awareness resulting from the DOE-wide sharing of the lessons from the INEEL event

March 1998

Using lessons learned, workers at the Idaho National Engineering and Environmental Laboratory properly responded to the discovery of bulging pressurized drums. Response planners based their drum-venting procedures on lessons learned from previous occurrences reported by other sites, avoiding unexpected releases of toxic material and/or explosions, as well as avoiding personal injuries, which had occurred during previous events.

January 1998

As the result of a fatality at the East Tennessee Technology Park (ETTP) in Oak Ridge, Tennessee, in a welding-related incident, the I Care/We Care Program was established. The program was created to provide a process for employees, subcontractors, lessees, and visitors to submit issues, near-misses,

suggestions, and concerns to management for resolution. I Care issues may be submitted anonymously by phone or on paper. Everyone who reports a safety issue is given a small token of appreciation. Really noteworthy safety suggestions are considered for ETTP manager's recognition awards which are presented at All Hands meetings. Staff submitted 196 safety and health issues between August and December 1997. Of these, 54 were deemed near-misses, and 166 were resolved. Three lessons learned have been generated from the I Care issues. Other DOE sites have used information about this program to improve their safety and health programs.

July 1997

As the result of following up on a lessons learned on Modular Offices and Metal Skid Electrical Requirements, the Waste Isolation Pilot Plant avoided a potential electrical shock to maintenance personnel. When the Savannah River Site posted the lessons learned on the DOE List Server in December 1995, the lessons learned was distributed to the WIPP Electrical Safety Committee. In 1996, all modular offices' electrical systems were tested to verify that both the systems and the building metal frame/skin were connected to the site's ground system. In July 1997, a maintenance technician was sent to repair a water leak under a modular office and came into contact with a metal conduit containing 110 volt energized conductors. Contact with the conduit caused it to separate at a coupling pinching the electrical conductors against the sharp edges of the conduit. When the conductors came in contact with the sharp edges of the conduit, the electrical insulation was damaged resulting in an electrical arc. The technician was not

shocked or injured because the fault current was dissipated through the frame of the modular office to the site ground system and the breaker tripped on over-current as designed.

January 1997

A quantity of depleted uranium in a storage building at the Pantex Plant exceeded the threshold limit for a Category 3 nuclear facility. On January 17, 1997, following a review of the lessons learned reported by Pantex, the Hanford Site conducted an inventory check of a warehouse and discovered that the quantity of depleted uranium stored there exceeded threshold limits. Appropriate actions were taken.

December 1996

An Aerodag G aerosol can over-pressurized and burst inside a flammable material storage cabinet located in a laboratory at Battelle Pacific Northwest National Laboratory. After learning of this accident via the DOE Lessons Learned List Server, the Savannah River Site performed searches for this material throughout their site. Thirty-one cans were found in six areas and were removed.

December 1996

The anchor system of a sixty-meter meteorological tower at the Sandia National Laboratory failed, causing the tower to fall and resulting in damage and replacement costs of \$20,000. The cause was attributed to the corrosion of galvanized steel rods in the underground section of the tower support system. This information was sent out as an alert via the DOE Lessons Learned List Server. As a result, the Idaho National Engineering and Environmental Laboratory and the Savannah River Site were able to take precautions to avoid similar occurrences by applying the information to their own operations.

March 1995

An alert received from Lawrence Livermore National Laboratory prevented an injury at the Savannah River Site. Analytical Development Section personnel at the Savannah River Technology Center evaluated a yellow alert from the DOE Lessons Learned List Server on a catastrophic failure of a tabletop centrifuge at Lawrence Livermore. Although Savannah River did not have the type of centrifuge described in the alert, they evaluated the information for generic implications because centrifuges made by other manufacturers could be subject to the same failure mode. By appropriately applying the lessons learned from the Lawrence Livermore event (i.e., restricting centrifuge operation to half speed), Analytical Development Section personnel prevented personal injury when a centrifuge with a misaligned rotor caused a tube of radioactive samples to hit the center of the centrifuge. The unbalanced centrifuge moved several inches. If the centrifuge had been operating at top speed, the force could have caused it to tip over, resulting in injury or contamination.

January 1994

Lessons learned program personnel at the Savannah River Site issued a directive that identified non-metallic bowls used in air supply systems as a significant personnel safety hazard. The directive resulted from concerns raised by site personnel who investigated the explosion of four non-metallic bowls in 1993. No one was injured and no equipment was damaged, but the potential for severe personnel injury, damage to facility equipment, and loss of equipment function existed. They identified and inspected portable and permanent facilities with air systems. They found approximately 500 bowls and designated them for replacement. They depressurized the bowls, if facility operations allowed it, until the bowls could be replaced. When it was not feasible to depressurize the bowls, they provided measures to protect personnel,

including installing shields or barricades or bypassing the bowls. They are modifying procurement procedures to address this issue.

April 1993

Personnel at a commercial uranium fuel fabrication facility reported a violation of a nuclear criticality safety limit because they could not demonstrate compliance with a posted administrative limit for the concentration of U-235. On May 18, 1993, following a review of the reported event, nuclear safety specialists at the Savannah River FB-Line performed a review to compare actual conditions in the facility against the requirements of nuclear safety postings. They found similar nuclear safety posting violations, and corrective measures were instituted.

Contact Information

Site Lessons Learned Coordinators are listed on the SELLS pages of the DOE Lessons Learned Web Site,
<http://tis.eh.doe.gov/ll>

DOE Lessons Learned Program Fact Sheets, by the Society for Effective Lessons Learned Sharing (SELLS), are available from the DOE Lessons Learned Web Site:

<http://tis.eh.doe.gov/ll>
or Cynthia Eubanks, (865) 576-7763
e-mail eub@bechteljacobs.org
or Mary McCune, (301) 903-8152
e-mail Mary.McCune@em.doe.gov
